



Shell Oil Products US

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August 15, 2013

Director, Air Enforcement Division
Office of Regulatory Enforcement
U.S. Environmental Protection Agency, Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460-0001

Subject: *United States v Equilon Enterprises, LLC*
Civil Action Number H-01-0978
Southern District of Texas entered August 21, 2001

Flaring Incident Report – August 4, 2013
Shell Oil Products US, Puget Sound Refinery

Dear Sir or Madam:

Pursuant to Section VIII, Paragraph 136 of the consent decree in *United States v Equilon Enterprises LLC*, Civil Action Number H-01-0978, entered August 21, 2001 by the United States District Court for the Southern District of Texas, Shell Oil Products US submits the following information regarding a Hydrocarbon Flaring Incident, as defined in Paragraph 120(f), that occurred at the Puget Sound Refinery. The incident was investigated and a detailed report listing the root causes is included in the attached Incident Report.

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and that I have made a diligent inquiry of those individuals immediately responsible for obtaining the information and that to the best of my knowledge and belief, the information submitted herewith is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If you have any comments or questions regarding this information, please contact Tim Figgie at (360) 293-1525.

Sincerely,

Thomas J. Rizzo
General Manager

Enclosure

PSR0000616

cc (w/enclosures):

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U.S. Environmental Protection Agency
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Director
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FLARING INCIDENT REPORT

Type of Incident: ☐ Acid Gas / SWSG ☐ Tail Gas ☒ Hydrocarbon

Brief Description of Incident:

On August 4 at approximately 8:30 PM Operators received a high level alarm on the DCU fractionator overhead compressor 15K1 accumulator drum. Operators responded immediately to the compressor and found the accumulator product drum pump 15G5 to be running erratic. Operators could not stabilize the pump and the compressor tripped on high liquid level, which resulted in excess flaring.

The 15G5 pump was running erratic because light naphtha material got into the 15K1 compressor overhead accumulator drum when the 15F100 heater tripped and the fractionation tower lost heat. The heater tripped when the Coker charge pump 15G129a developed a seal leak and Operations was required to switch to the spare pump 15G129b. While switching to 15G129b Operations found that the check valve on 15G129b was not holding so the 15G129a pump had to be shutdown before starting 15G129b, which resulted in the trip of the 15F100 heater.

Once the spare charge pump 15G129b was started Operations attempted to restart the compressor accumulator product drum pump 15G5. They had to vent the case to get the pump to restart. When the level was under control operations tried to restart the compressor and were unable to do so until I&E Technicians reset the breaker. Once the breaker was reset and 15K1 was restarted, the excess flaring stopped.

To prevent reoccurrence the fractionator overhead temperature control scheme was adjusted to help maintain higher temperatures on the overhead during this type of situation to allow heavier material to flow to the overhead accumulator so as to not vapor up the pumps.

Incident Start Date:	8/4/2013	Incident Start Time:	8:30 PM
Incident End Date:	8/4/2013	Incident End Time:	11:30 PM

Estimated Sulfur Dioxide Emissions: (Attach below):	1140	Pounds
SO ₂ lbs/hr = 0.995*(flare gas flow, MSCFH * 1000) * (Sulfur, vol% / 100) * (64.0648/379), where 0.995 is flare efficiency, 64 #/#-mole is the MW of SO ₂ and 379 is scf/#-mole		

Steps taken to limit the duration and/or quantity of sulfur dioxide emissions:

All 5 FGR compressors were operating to reduce the amount and duration of this flaring event.

ANALYSIS OF INCIDENT AND CORRECTIVE ACTIONS

No additional information attached

Primary and contributing causes of incident:

The initiating root cause of this event was a seal failure on charge pump 15G129a. A contributing factor was a failed check valve on spare pump 15G129b, which required a complete shutdown of pump 15G129a before the spare could be started.

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

To prevent reoccurrence the fractionator overhead temperature control scheme was adjusted to help maintain higher temperatures on the overhead during this type of situation to allow heavier material to flow to the overhead accumulator so as to not vapor up the pumps.

Description of corrective action to be taken (include commencement and completion dates):

See above.

If correction not required, explain basis for conclusion:

See above.

The incident was the result of or resulted in the following (check all that apply):

- ☐ Error from careless operation
- ☐ Equipment failure due to failure to operate and maintain in accordance with good engineering practice
- ☐ Sulfur dioxide emissions greater than 20 #/hr continuously for three or more consecutive hours
- ☐ Caused the number of Acid Gas or Tail Gas incidents in a rolling twelve-month period to exceed five
- ☒ None of the above

Was the root cause identified as a process problem isolated within an SRP?

- ☐ Yes (An optimization study of the affected SRP is required as part of the corrective actions identified above.)
- ☒ No

The root cause of the incident was:

- ☒ Identified for the first time since March 21, 2001
- ☐ Identified as a recurrence since March 21, 2001 (explain previous incident(s) below)

Was the root cause of the incident a malfunction?

- ☒ Yes (describe below)
- ☐ No

The initiating root cause of this event was a seal failure on charge pump 15G129a.

Definition of Malfunction: *Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.*

REPORTING REQUIREMENTS

Submit initial report, supporting documents and assessment of stipulated penalties, if any, within 30 days of the incident to the EPA Regional Office and Northwest Clean Air Agency.

If at the time the first report is submitted (within 30 days of the incident), corrective actions have not been determined a follow-up report is required within 45 days of first report (unless otherwise approved by the EPA). Provide anticipated date of follow-up report.

Stipulated penalties do not apply to hydrocarbon flaring events.

Prepared By: Tim Figgie Date: August 14, 2013

PSR0000619